

AMENDMENTS TO THE CLAIMS

1 - 34 (cancelled).

1 ~~35~~ (original). A method of encoding chemical taggants using multiple pairs of chemicals to represent the bits of a binary serial number wherein the presence of one chemical of each pair represents a first predetermined bit value and the presence of the other chemical of each pair represents a second predetermined bit value.

2 ~~36~~ (original). The method of claim ~~35~~ where one of the predetermined bit values is 0 and the other predetermined bit value is 1.

3 ~~37~~ (original). A method of encoding chemical taggants comprising:
identifying a group of $M \times N$ distinct chemical taggants where M and N are integers; and
dividing said chemical taggants into M groups of N chemicals each; and
assigning one taggant chemical from each of the M groups to correspond to each integer from 0 to $N-1$ inclusive; and
isolating the substance to be tagged and assigning to it an M -digit, base- N serial number;
and
adding to the substance to be tagged a quantity of each of the M chemicals corresponding to the values of the M digits in the assigned serial number.

38 - 41 (cancelled).

4 ~~42~~ (original). A binary taggant comprising:
at least a first chemical pair comprising:
a first chemical of the first chemical pair capable of functioning as a taggant and
representative of the first of two binary values; and
a second chemical of the first chemical pair capable of functioning as a taggant and
representative of the second of the two binary values.

5 ~~43~~ (original). The binary taggant of claim ⁴~~42~~ further comprising:
a second chemical pair comprising:
a first chemical of the second chemical pair capable of functioning as a taggant
and representative of the first of two binary values; and
a second chemical of the second chemical pair capable of functioning as a taggant
and representative of the second of the two binary values.

6 ⁴~~44~~ (original). The binary taggant of claim ~~42~~ further comprising:
at least two additional chemical pairs each of said pairs comprising:
a first chemical of each additional chemical pair capable of functioning as a
taggant and representative of the first of two binary values; and
a second chemical of each additional chemical pair capable of functioning as a
taggant and representative of the second of the two binary values.

45 - 47 (cancelled).

~~1~~ ⁷ ~~48~~ (original). An encoded taggant system capable of representing any M-digit, base-N serial number where M and N are integers, comprising:

M x N distinct chemicals each capable of functioning as a taggant;

said M x N distinct chemicals grouped into M groups of N distinct chemicals in each of the M groups; and

each of the N distinct chemical in each of the M groups corresponding to one integer from 0 to N-1 inclusive,

whereby a quantity of the distinct chemicals corresponding to the values of a predetermined, M-digit, base-N serial number may be selected and added to a substance assigned to the predetermined serial number.

~~8~~ ⁷ ~~49~~ (original). The taggant system of claim ~~48~~ ⁷ wherein at least one of the taggant chemicals is isotopically substituted.

50 - 60 (canceled).